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TITLE: Method and system for providing quick directions

Abstract Text (1):
A method and system for providing a telephone caller information assistance such as driving directions from a starting location to a destination location. To obtain information assistance, the caller places a telephone call to access the system. If the geographical location of the caller can be determined by an automatic location identification system it is displayed on an operator console where the caller's request is transferred to be handled by a live operator. The operator receives the caller's destination request and queries the system for the street route driving instructions to the requested destination. After obtaining the street route driving instructions, the call can be transferred to an audio box having an interactive user interface capable of replaying the desired information to the caller. In an illustrative embodiment, the interactive user interface is capable providing functions to stop, start, pause, and replay the information to the caller.

Brief Summary Text (5):
Today, travel directions to a destination location can be obtained in different ways. Internet web sites now provide map routing software that generate and display driving instructions from one starting location to another destination location. The traveler enters the desired starting (from) location and the desired destination (to) location into the software program and has the option to select the fastest, easiest, or shortest distance driving directions to the destination location. The map routing software determines the route to the destination and displays it on the user's display terminal with step-by-step driving directions, estimated travel times, and mileage from the starting location to the ending location. This type of map routing software, however, requires a traveler to plan his trip in advance and have Internet access. It is of little assistance in the situation when a traveler becomes lost during his trip, needs assistance with directions, and does not have ready access to the Internet.

Detailed Description Text (10):
Preferably, a call detail record data structure is also created and sent to the operator console 18 along with the forwarded telephone call. The call detail record may contain a variety of information regarding the arriving telephone call which can be displayed on the operator console 18 to provide the operator information regarding the incoming telephone call. In the illustrative embodiment, the call detail can include a number of pre-populated fields to show the operator a number of details regarding the call such as the calling telephone number, the called telephone number, the location of the caller, and the station type of the calling telephone number. Different station types such as coin or pay station, residence, or hotel telephone systems are well known to those skilled in the art. For example, in an illustrative embodiment the calling location of the incoming telephone calling is determined using a suitable calling telephone location technology 17 as will be described in further detail below. The location of the caller determined by the ANI is sent to the call detail record to the operator console 18.

Detailed Description Text (11):
The operator console 18 displays the call details to the operator while the call is being handled. Referring now to FIG. 2, shown is an exemplary display of the operator console 18 while handling a call requesting directions to a destination location. It should be understood that FIG. 2 is a simplified illustrative drawing and the operator console display can be implemented as a Windows-type interface. At the bottom of the screen, a call detail window 32 can display call information from the call detail record, such as the ANI or location where the caller and the desired ANI where the caller wishes the directions to start. Often the caller's ANI and the desired ANI will be the same. The caller may also, however, request that directions be given from a different

location, resulting in a different desired starting location. The address fields and the cross street information can be determined from the ANI and the database information. The station type of the caller may also be displayed, but is not explicitly shown in this example. The operator views the call details and queries the subscriber 12 for his or her request. Preferably, the caller's location is automatically identified and displayed on the operator console 18 as described above. Of course, the operator can request the caller for the starting location to confirm the automatically identified location. The operator can accept the information in the call detail window 32 or make any changes or correction to the information before making the request to the database to map the route.

Detailed Description Text (15):
Referring to FIG. 3, the starting and destination locations are applied to a database 20 to map a route and create step-by-step route driving instructions between the starting location and the selected destination location. Preferably, a map routing software program 21 applies the geo-coordinates of the selected locations to the routing database 24 to determine appropriate routing instructions 25 from the starting geo-coordinate to the ending geo-coordinate as will be described in more detail below. In the illustrative embodiment, the route instructions or driving directions 25 are step-by-step street driving instructions. The route instructions 25 can then be passed to the operator console 18 for the operator to view and relay to the caller. Referring again to FIG. 2, the route instructions can be displayed on the main portion or window 34 displayed on the operator console 18. Preferably, the instructions are demarcated in a step-by-step manner as illustrated in FIG. 2.

Detailed Description Text (25):
After the originating geographic location of the incoming call is determined, the call is sent to an operator console 18 to allow callers 12 to specify their desired destination location. Switching device 16 switches the incoming telephone call to the operator workstation 18 to connect the call with a live operator. The operator workstation 18 will display the ANI and calling location of the telephone caller 12 to the operator console 12 if the ALI has determined the caller's location. If ALI could not identify the caller location, the call detail will not show the caller's location on the operator console 18 and the live operator must query the caller to manually obtain the originating calling location.

Detailed Description Text (26):
After the location of the caller is identified, the caller location is included in a call detail that is sent to the operator console 18 and displayed to the operator. Because a caller's location has been determined, the operator need not query callers for their location unless there was problem with the ALI. The operator can then move on to immediately query callers for their requests, thus speeding the handling of calls and increasing the productivity of the operator.

Detailed Description Text (29):
In an illustrative embodiment of the invention, it is contemplated an automated interactive voice response system provided by the audio box 28 allows callers 12 to access the information without requiring a live human operator. Alternatively, a user may access the system using a computing device with a modem and a computer display. Preferably the computing device is a portable computer such as a handheld or palmtop computer which can be used by a caller who is traveling and away from the office. The portable computer may have any suitable interface and display for showing text and preferably even graphics capability for displaying maps. The portable computer may have a Windows CE, Palm OS, Apple Newton or other operating system suitable for a portable computer. Suitable computing platforms include portable devices such as a Palm Pilot, Apple Newton, portable Windows CE machines, or similar portable machines from Psion, Phillips, Hewlett-Packard, and other manufacturers of portable computing devices. These portable-computing devices can be used to access into the system on a dialup telephone line that can be provided to allow access by a computer terminal. Once accessed to the system, the user can operate the system through a computer interface, without requiring an operator.

Detailed Description Text (31):
In a particular embodiment, the mapping application software can be provided in conjunction with a variety of real-time information such as weather, traffic travel times, and road conditions. For example, local transportation authorities offer real time traffic information on the local highways and interstate roads. These systems typically provide travel times between selected locations as well as the speed of moving traffic at road sensors embedded into the roadway monitoring the speed of moving traffic. Road construction information is also provided by the location of the construction (i.e., "Eastbound I-88 at the Fox River Bridge"), the construction

type (i.e., "Road Closure" or "Lane Closure") and the duration of the closure (i.e., "02/20/1998 08:00 to 02/20/1998 14:00"). An example of this type of information is provided by the Gary-Chicago-Milwaukee ("GCM") Priority Corridor--Illinois Department of Transportation, Indiana Department of Transportation, and Wisconsin Department of Transportation in cooperation with the University of Illinois at Chicago Department of Electrical Engineering and Computer Science. The federal government has provided funding for these types of projects in the IVHS Act of 1991 as part of the Intermodal Surface Transportation Efficiency Act of 1991. Additional information can be found at the GCM web page on the Internet. The traffic/construction information can be used by the system to avoid routes that are closed or are experiencing undue delays due to construction. The system can be programmed to avoid mapping routes through construction routes by creating alternative routes, or recalculating routes not using the sections of road under construction.

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